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Wessels et al.

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(54) PROCESS FOR THE REMOVAL OF
ORGANIC SUBSTANCES (TOC),
PESTICIDES, OR OTHER SUBSTANCES
FROM A SALT SOLUTION

(30) Foreign Application Priority Data

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(75) Inventors: Leo Peter Wessels, Amersfoort (NL);
Wilhelmus Cornelis Van Praessen,
Borrel (NL); Harry Fritselaar, Hoogeveen
(NL); Walterus Gijzenrus Joseph Van
Der Meer, Smeek (NL)

Correspondence Address:
AKIN, GUMP, STRAUSS, HAUER & FELD,
L.L.P.
ONE COMMERCE SQUARE
2005 MARKET STREET, SUITE 2200
PHILADELPHIA, PA 19103 (US)

(73) Assignee: DHV Water B.V.

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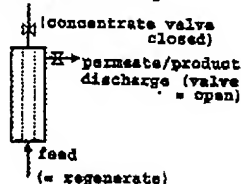
Related U.S. Application Data

(53) Continuation of application No. PCT/NL00/00545,
Filed on Jul. 25, 2000.

(57) ABSTRACT

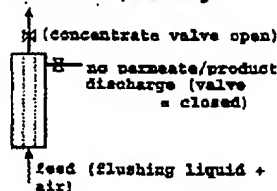
A process is provided for the removal of organic substances (TOC), pesticides or other specific compounds from an aqueous salt solution, for example from a regenerate derived from water purification. The TOC-containing aqueous salt solution is treated in a desalination membrane according to the dead-end principle, wherein neither longitudinal flow over the membrane with air and/or water, nor continuous concentrate discharge takes place, after which the obtained permeate is treated, and the concentrate obtained after flushing is discharged. The TOC-containing aqueous salt solution is introduced to the feed side of the membrane module at a flux of 5-75 l/m²h, a feed pressure of 4-12 bars for 30-40 minutes, while the obtained TOC-depleted permeate is discharged. Preferably, operation takes place at a flux of 15-25 l/m²h, a pressure of approximately 8 bars, and the duration of treatment is approximately 30 minutes. The membrane used is tubular, capillary, hollow fiber or helically wound, and is usually of the nanofiltration or reverse osmosis type.

no concentrate/discharge



3. Nanofiltration during
operation (dead-end)

concentrate/discharge



4. Nanofiltration during
flushing/concentrate
discharge

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1	<input type="checkbox"/>	US 20020070158 A1	20020613	10	MEMBRANE ELEMENT AND PROCESS FOR ITS PRODUCTION	210/321 74	210/321 33		FUECHER, KLAUS et al.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	<input type="checkbox"/>	US 20020005385 A1	20020117	17	Water treatment systems and methods	210/748	210/196 1		Stevens, Donald B. SR. et al	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	<input type="checkbox"/>	US 20010054420 A1	20011127	10	Process for production of purified beet juice for sugar manufacture	127/35	210/203		Reisig, Richard C. et al	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	<input type="checkbox"/>	US 6113792 A	20000005	13	Method for removing contaminants from water using membrane filtration	210/636	210/650		Benjamin, Mark M. et al.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	<input type="checkbox"/>	US 5835071 A	19970603	10	Recovery of carboxylic acids from chemical plant effluents	210/652	210/641		Al-Samadi, Riad A.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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 - 🔍 L1: (373733) membrane
 - 🔍 L2: (0) membrane adj nanofiltration adj dead-end
 - 🔍 L3: (0) membrane adj nanofiltration same dead\$1 end
 - 🔍 L4: (0) membrane adj nanofiltration and dead\$1 end
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membrane and nanofiltration and dead\$1 end

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1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	US 20020147282 A1	20021010	36	Graft copolymers, methods for grafting hydrophilic chains onto hydrophobic chains	525/245	525/276, 525/292		Mayes, Anne M. et al.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	US 20010054420 A1	20011227	10	Process for production of purified beet juice for sugar manufacture	127/53			Reisig, Richard C. et al.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	<input checked="" type="checkbox"/>	<input type="checkbox"/>	US 6440222 B1	20020827	15	Sugar beet membrane filtration process	127/55	127/43, 127/46, 2, 127/43;		Donovan, Michael et al.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	<input checked="" type="checkbox"/>	<input type="checkbox"/>	US 6406547 B1	20020818	13	Sugar beet membrane filtration process	127/55	127/46, 2, 127/43;		Donovan, Michael et al.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	<input checked="" type="checkbox"/>	<input type="checkbox"/>	US 6387186 B1	20020514	11	Process for production of purified beet juice for sugar manufacture	127/55	127/46, 2, 127/54		Reisig, Richard C. et al.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	<input checked="" type="checkbox"/>	<input type="checkbox"/>	US 5922200 A	19990713	22	Membrane filtration apparatus for dead end filtration	210/321.75	210/321.6, 210/321.64;		Paul, Steven R. et al.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	<input checked="" type="checkbox"/>	<input type="checkbox"/>	US 5919370 A	19990706	11	Integral, multi-asymmetric, semi-permeable membrane	210/646	210/490, 210/500, 21, 210/641;		Rottger, Henning et al.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	<input checked="" type="checkbox"/>	<input type="checkbox"/>	US 5835071 A	19970603	10	Recovery of carboxylic acids from chemical plant effluents	210/652	210/651;		Al-Samadi, Riad A.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>